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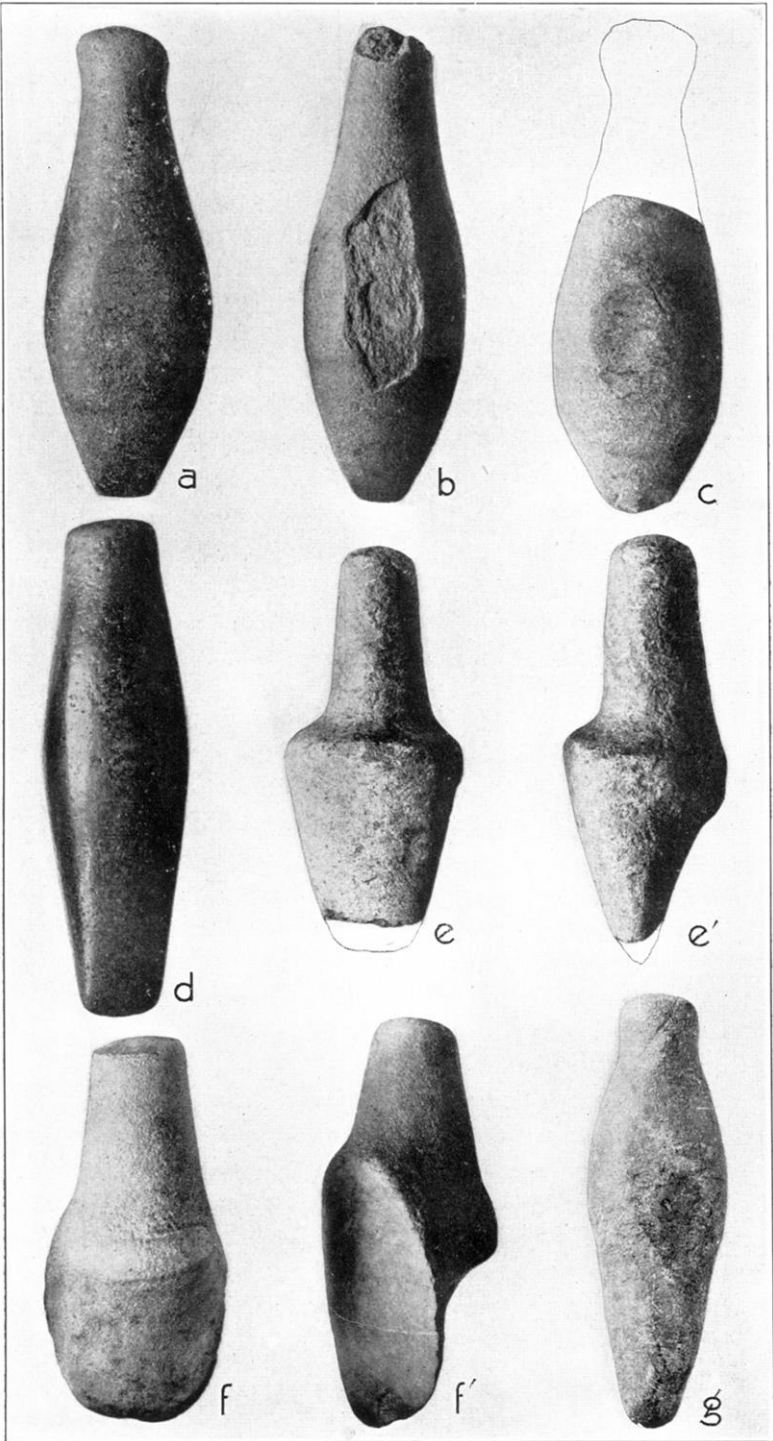
## NOTEWORTHY ARCHEOLOGICAL SPECIMENS FROM LOWER COLUMBIA VALLEY

By HARLAN I. SMITH

In the summer of 1903 I examined the archeological collection of the Oregon Historical Society, in its museum in the City Hall at Portland. The collection contained unique sculptures as well as excellent types of rare objects supplementary to the material already forming a part of the collections in the American Museum of Natural History, as well as to the specimens included in the author's gatherings of that season in the field, and to those he had seen in the small collections of the region, and in the large museums of the East, such as those at Harvard, Yale, the University of Pennsylvania, and the National Museum at Washington. A loan of the original specimens for study in the Museum being greatly preferable to notes and sketches made on the spot, the Society, through its assistant secretary, Mr George H. Himes, courteously granted permission for their shipment to New York for study, photographing and casting. The Society also liberally granted the writer permission to take duplicate photographs and casts to supply the needs of other students and institutions, and otherwise to use them as might be deemed desirable in furthering the cause of ethnology. Prints from the negatives and casts from the molds of the specimens may now be obtained by students or institutions conducting researches on the North Pacific coast.

The sculptures, some of which are unique, are characteristic of the region of the lower Willamette. While not attempting to explain fully what these sculptures represent, they may be regarded as of great value in showing the character of the ancient art of that section.

Four specimens (pl. XXIII, *a-d*), which may be designated hand-hammer-adzes, have celtlike edges, but otherwise resemble cylindrical pestles with rather small knob-shaped tops. On each side may be noticed a facet or shallow pit.



STONE IMPLEMENTS FROM THE LOWER COLUMBIA VALLEY

*a, b, c, d,* Hand-hammer adzes. *e-f,* Hand-adzes (*e-e'*, convex side and edge; *f-f'*, concave side and edge). *g,* Hand-hammer adz. (About  $\frac{1}{4}$ )

The first hand-hammer-adze (*a*) resembles a plummet or cylindrical pestle, but it is not as thick as it is wide. On each side is a facet, apparently formed by using the object as a hammer for some soft-headed tool, such as a canoe-maker's wedge of wood or antler. The specimen has a knob-shaped top, a celtlike end with a rather straight edge, and is  $8\frac{5}{16}$  inches (211 mm.) long. The bit is squarish and seems to have been reworked back from the edge for about one-fifth of the entire length. Where this reworked surface terminates abruptly there is a rise to the older surface which in certain lights appears to form a ridge, in others a groove. There are similar but less distinct signs that the surface of the bit had been once or twice previously reworked still farther back, nearly to the edges of the facets. The present specimen is made of a heavy bluish-gray stone resembling diorite. The surface is smooth, especially on the ground bevels that form the celtlike edge and on the facets. This specimen was found by Mrs A. Dwier of Mt Tabor, and in November, 1900, was presented to the museum of the Oregon Historical Society by the Oregon Alpine Club, of which she was a member. (Cat. no. 99, List no. 29; Am. Mus. Nat. Hist., Cast cat. no. 16/9855, Neg. no. 12.)

The second hand-hammer-adze (*b*) closely resembles the first, except that the facet and surrounding surface on one side have been broken out, apparently by the use of the specimen as a pounding instrument. The knob-shaped top likewise is broken, as if pounded in an effort to use the whole object as a chisel or wedge as well as for an adze and a hammer; it shows only one reworked surface, which extends back nearly to the edge of the remaining (hardly noticeable) facet. The second specimen is  $8\frac{1}{2}$  inches (216 mm.) long, and is composed of rather lighter and warmer-colored stone than the first. The marks left in pecking it into shape have not been entirely effaced by polishing except on the rubbed bevels which form the celtlike edge. The implement just described was found by Mrs A. Dwier of Mt Tabor, representing the Oregon Alpine Club, and in November, 1900, it was loaned to the museum of the Oregon Historical Society. (Cat. no. 139, List no. 27; Am. Mus. Nat. Hist., Cast cat. no. 16/9853, Neg. no. 12.)

The third hand-hammer-adze (*c*) also very closely resembles the

first, except that the upper third is broken off and missing. The cutting edge is somewhat curved and is fractured twice on each side; the bit is oval in section and its sides, which bevel suddenly from the shaft, bulge so slightly that they seem concave and apparently are somewhat reworked; and the pits on both sides are pronounced and very smooth. The specimen, which is covered with yellow clay, was found by the Oregon Alpine Club, and in November, 1900, was deposited in the museum of the Oregon Historical Society. (Cat. no. 140, List no. 26; Am. Mus. Nat. Hist., Neg. no. 12. No cast.)

The fourth hand-hammer-adze (*d*) differs from the first three in that it has no top knob, facets, or reworked surface. The cutting edge is curved, convex on one side and less so on the other, giving the implement a form similar to that of some of the celts of the Mississippi valley. The surface is polished very smooth but still shows some of the marks of pecking by means of which the object was fashioned. The specimen is  $8\frac{7}{8}$  inches (226 mm.) long and of a yellowish brown color. It was found in Washington county, Oregon, and was presented in November, 1900, to the museum of the Oregon Historical Society, by Mr A. H. Garrison of Hillsboro. (Cat. no. 29 (10029), List no. 28; Am. Mus. Nat. Hist., Cast cat. no. 16/9854, Neg. no. 12.)

There is a similar hand-hammer-adze in the collection of Mr D. W. Owen, of Kennewick, Washington, which he says is from Umatilla, Oregon. This specimen, so far as is known at present, indicates the eastern limit of distribution of this form.

The first specimen of this kind that came to my notice is in the James Terry collection in the American Museum of Natural History. It is catalogued under no. T-22774 as a "chisel stone, plummet shaped, Columbia City, Columbia river, Oregon . . . collected by Dr C. G. Capler on October 4, 1882." In general it (*g*) resembles the first hand-hammer-adze described in this paper, but the object as a whole is of a slightly different shape, the neck being short, the lateral bulge of the body high up near the neck, and the bit long and slender; one facet merges into the flat surface of the side, while the other is rough, apparently having been made by pecking. The entire surface from the top to the side is curved

continuously, the neck being formed by grooving the side edges and carrying the groove around nearly to the middle of the sides, but leaving a small surface standing out like a ridge connecting the top with the side. The bit is oval in cross-section and the celtlike edge is convex. On each face of the bit are four grooves, two on each side. They extend from points between the side and the edge, near the middle of the object, to the bevel for the blade. The grooves on the left part of each side extend farther to the right at the blade, causing the object to suggest a spiral or screw. The specimen is  $8\frac{3}{8}$  inches (213 mm.) long, made of heavy stone of a light bluish-gray color; the surface is smooth in some places but shows marks of pecking in others.

Mr E. D. Zimmerman, of Philadelphia, informs me that in his private collection at Monterey, Pa., are six or seven hand-hammer-adzes. Judging from a photograph of a portion of the collection, these are of the type here described; one of them has a hat-shaped top; two at least are of the long-bitted variety.

In a photograph of the H. C. Stevens collection, recently offered for sale, may be seen at least three hand-hammer-adzes. One of these has a simple knob at the top; another, a hat-shaped top, bulging body, and long bit; while a third specimen, which appears to be of the type above described, has a long bit. The top is grooved around twice (cf. fig. 23 *e*, *Mem. Am. Mus. Nat. Hist.*, iv) and on the side of the body shown in the photograph are two grooves which meet near the neck and then diverge, passing on each side of the spot where the facet is usually found, toward the edges of the side. No facet shows in the picture. The grooves just described give the object an appearance suggesting the lower side of a fish, the grooves indicating the gill slits.

Rev. Myron Eells probably refers to this type of object in his statement that "still another seems to have been a pestle at the handle end, and a blunt edge at the other."<sup>1</sup> He also doubtless alludes to this type when, referring to chisels and wedges, he states:

"Dr Rafferty has nine whole ones, or parts, about which there is no doubt. They mostly come from Sauvies Island, and are generally of hard

<sup>1</sup> *Smithsonian Report* for 1886, p. 286.

volcanic rock. They vary in weight from 2 pounds 14 ounces to 5 pounds 11 ounces; in length from  $6\frac{1}{2}$  to  $13\frac{3}{4}$  inches, and width from  $2\frac{3}{4}$  to  $3\frac{1}{2}$  inches, and in thickness from  $2\frac{1}{8}$  to  $2\frac{3}{4}$  inches. The edges are sharp, but the stone is thick a short distance from the edge. I know of none from other parts of Oregon."<sup>1</sup>

The fact that some of the grooves on the Terry specimen looked as if recently made, taken in connection with its peculiar shape, led the writer at first to regard it as a questionable specimen, or at least as a "sport" not at all characteristic of the region. The number of similar specimens from a restricted area which have since come to the author's notice, however, prove that they constitute a type characteristic of the archeology of Willamette valley and vicinity.

The facets suggest that these specimens have been used as hammers. The writer found similar objects only a short distance to the northwest of Portland, from Copalis head southward to Shoalwater bay, Washington, which are of the same type as those known to have been used by canoe-makers as hammers, that were secured in 1898 by Dr Livingston Farrand among the Indians at Quinault. However, all the specimens found from Quinault to Shoalwater bay, so far as the author is aware, have plain ends instead of celtlike ends and may be called hand-hammers. Probably these hand-hammer-adzes were used by canoe-makers as combination hammers and adzes, the blows being delivered in such a way as to form the facets.

Two specimens (pl. XXIII, *e-e'*, *f-f'*), which may be designated hand-adzes, have celtlike ends and tops resembling pestles.

The first hand-adze (*e*, *e'*) resembles in its upper portion a pestle, with a circular body, somewhat larger at the base than at the top, a disk-shaped striking-head, and a convex top. The surface of this portion of the object shows very slight scars or flutings, reminding one of the surface of a whittled stick or of a pared vegetable. The shaft expands suddenly into the disk-shaped striking-head, which in turn coalesces into a celtlike form projecting from the base of the upper portion. The line of demarkation between the upper (cylindrical) and the lower (celtlike) portions of the specimen is obscure except along part of one edge (*e'*). The celtlike

<sup>1</sup> Ibid., p. 288.

part is somewhat convex on one side (shown in *e*), concave on the other, especially at its base, but elliptical in cross-section ; it tapers gradually from its large base toward what was once the cutting edge, but which is broken off. There are many signs of fluting on the convex face. The whole object is  $6\frac{7}{8}$  inches (174 mm.) long. It is hard and heavy and appears to be basalt, although the surface, except where broken, is much weathered and resembles yellowish-gray chalk.

This hand-adze was found in the garden of Mr E. D. Nelson, Portland, Oregon, and was presented by him on February 5, 1903, to the Museum of the Oregon Historical Society. (Cat. no. 382 (380), List no. 35 ; Am. Mus. Nat. Hist., Cast cat. no. 16/9860, Neg. no. 1 (edge) and 3 (side).)

The second hand-adze (*f*, *f'*) resembles the first, but the top and the convex exterior of the bit present the natural surface of a water-worn pebble, while the remainder of the surface shows marks of pecking, by which process the object was fashioned from the pebble. In some places these marks are partially obliterated by grinding and polishing. There are no flutings on the surface. The disk shape of the striking-head shows plainly for fully half the circumference of the specimen, but the convex side of the celtlike part extends nearly half-way up the shaft of the pestle-like part. It is set, as it were, about half-way its length on the side of the lower half of the pestle-like part. The bit is lenticular in cross-section and oval in outline. The cutting edge is semicircular, sharp and beveled to an edge, chiefly from the concave side. The whole object is  $7\frac{1}{4}$  inches (184 mm.) long and is made of heavy grayish or milky blue mottled stone, possibly slate.

This specimen was found on Columbia slough about ten miles below Portland and was deposited in the Museum of the Oregon Historical Society on Nov. 30, 1902. (Cat. no. 383, List no. 36 ; Am. Mus. of Nat. Hist., Cast cat. no. 16/9861, Neg. no. 1 (edge) and 3 (side).)

There is a specimen of this type (cat. no. 25) in the collection of Mr Louis O. Janeck, North Yakima, Washington. The natural surface of the pebble from which the implement was made shows on the ridge, or the part which corresponds to the sides of the



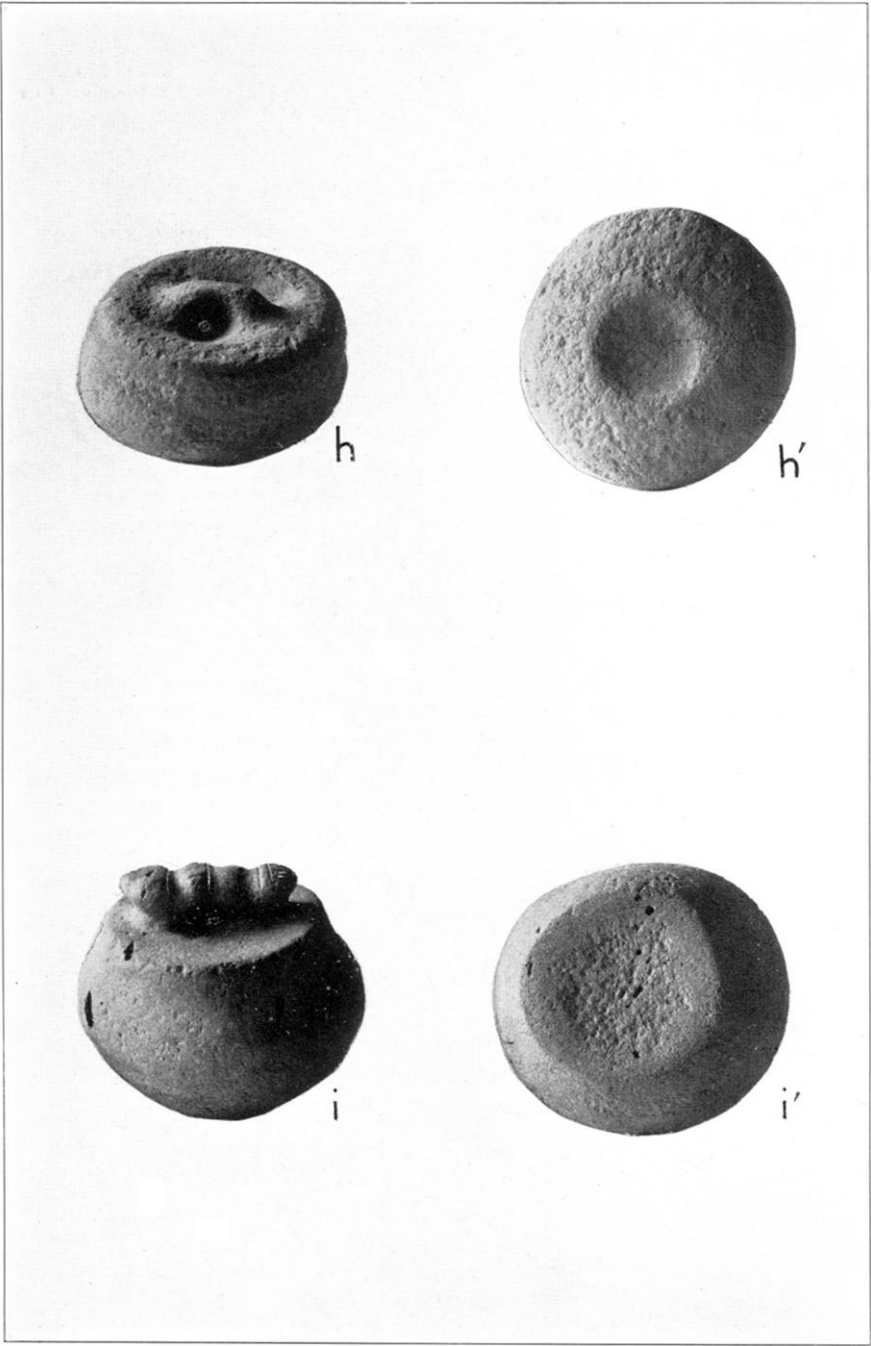
striking-head of the pestle-like section. The specimen is  $6\frac{1}{2}$  inches (165 mm.) long and made of rock resembling diorite or diabase. (Am. Mus. Nat. Hist., Neg. cat. no. 44452 (2-1), 44503 (6-4).) It is perhaps the most nearly perfect form of this type ever seen by the writer. The upper end corresponds closely in form to a pestle, with a slight indication of a knob at the top, a flaring body, and a short striking-head the periphery of which extends as a ridge nearly, if not quite, around the specimen. The celtlike part is toward one edge, so that one side expands to meet the ridge above mentioned, forming a concavity; the other contracts to meet it, forming a convex sweep from the cutting edge to the beginning of the body of the pestle-like part. The specimen was found near the surface in an old burial ground of the Indians near the mouth of Yakima river on what is known as McNeals island. This specimen marks the present known eastern limit of the occurrence of the form. Mr Zimmerman has informed me that there are five or six specimens of this type in his collection.

The region north of Portland has yielded a pestle,<sup>1</sup> shaped like the upper part of the present specimens, which was used as a hammer, the blow being delivered with the end instead of with the side as in the previous case. From the same area come stone celts hafted in handles made of antler (see fig. 29 *d*, p. 164, Mem. Am. Mus. Nat. Hist., iv). From the region south of Portland are such celts, hafted by being lashed to stone handles (for specimens of such handles see Oreg. Hist. Soc. cat. no. 381, list 34, and the collections of the American Museum of Natural History, the United States National Museum, and the Peabody Museum of Harvard). It seems to the writer, therefore, that this type (the hand-adze) is a combination of the pestle-shaped hammer of the north and the stone celt-handle of the south with the celt of both regions, and that it resulted from a modification and combination of the same ideas that produced these neighboring forms with which it may be compared.

It is also interesting to compare this form with one from the gravel at Oregon bar, California, shown in plates II and VIII of the paper by Professor William H. Holmes on Auriferous Gravel

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<sup>1</sup> See *American Anthropologist*, N. S., I, fig. 10 *c*, p. 364, 1899.



SIDE AND BOTTOM VIEWS OF STONE WEIGHTS  
(About  $\frac{1}{4}$ )

Man in California.<sup>1</sup> However, the present writer believes this form from the gravel is not closely related to the hand-adze herein considered.

Among fugitive specimens in small collections which the author saw in the field during 1903 were a few specimens of these two types (of most of which notes and sketches were made), but there is only one specimen of the hand-hammer-adze and none of the hand-adze in the American Museum of Natural History; consequently the photographs, casts, and notes of these objects are of special value in our researches and for exhibition purposes.

Two other specimens (pl. xxiv, *h, i*) may be called weights. Each of these is a disk-shaped object the top of which is provided with a perforated handle. These specimens are a new puzzle to all who have seen them.

The first weight (*h, h'*) is made of sandstone of a warm gray color and shows peck marks on many portions of the surface, these not having been obliterated by grinding. It is roughly the shape of a truncated cone or disk. The handle in the upper surface is formed by a hole made by drilling a tapering pit from each side. The under side of this handle shows no signs of wear. The top of the disk is somewhat dished for a portion of its circumference, including the pits and a space over the ends of the handle. Around the edge of the object is a wide shallow groove, and in the center of the convex base is a hollow about one-third the diameter of the base. This specimen is in the museum of the Oregon Historical Society, having been loaned by Mr Joseph Howell in 1902. (Cat. no. 267, List no. 9; Am. Mus. Nat. Hist., Cast cat. no. 16/9838, Neg. no. 27 (base) and 28 (side).) There is a specimen identical with this object, so far as can be determined from a photograph, in the Zimmerman collection.

The second weight (*i, i'*) likewise is made of sandstone of warm gray color; it shows peck marks only on the middle of the concave base and on portions of the edges. It is roughly of disk shape and has a slightly concave top with a shallow groove around the periphery just below the top, and two similar but smaller encircling grooves immediately above the base, leaving a bulging place, or

<sup>1</sup> *Smithsonian Report* for 1899.

ridge, around the middle, between the upper and the lower grooves. The margin of the concave base is flat and shows scratches resembling file marks. Similar scratches may be seen on portions of the periphery. On the top is a handle in the form of some animal, possibly a lizard. The mouth is indicated by an incision; the eyes if ever marked are now obliterated; there is an incision across the neck; the shoulders are raised and an incision extends across them in front of which are parallel longitudinal lines; the back is raised; two parallel incisions cross in front of the tail on which are five parallel longitudinal cuts. Under the belly is a hole made by a tapering pit cut from each side, oval or somewhat rectangular in form with rounded corners and bulging sides. There are no signs of wear on the upper part of this perforation. The specimen is in the museum of the Oregon Historical Society, having been loaned by Mrs Joseph Howell in 1902. (Cat. no. 266, List 10; Am. Mus. of Nat. Hist., Cast cat. no. 16/9839, Neg. no. 27 (base), and 28 (side).

These two weights were found in 1902 by Mrs Joseph Howell, Arthur, Oregon, on the shore of Sauvies island, from eight to ten miles below Portland, about eight or ten feet beneath the surface. Every season, beginning generally in April, the Columbia river rises considerably as the result of the melting snow; this causes a rise in the Willamette owing to the back water, and sometimes a large part of Sauvies island is covered. By the middle of July the surplus water begins to run out and in a month or two the river reaches its normal stage. While the water is rising the waves caused by the passage of steamboats continually wash the shores of the island, causing more or less earth to crumble off, thus dislodging or exposing Indian artifacts. These may frequently be found after the swollen stream has subsided. The objects above mentioned were uncovered in this way.

Mr Himes writes that he has seen Indians use grooved stones as sinkers or anchors, the weight being fastened to the bow of the canoe by a rope of hair or grass. He calls these two specimens "anchor stones or sinkers, of unusual shape."

The animal form and the technique of these objects, notably the tapering holes, seem to be representative of Indian art, but the en-

semble is a form new to Indian technology. The specimens remind us of the iron weights used for hitching horses. As there is no evidence to prove them of great age (the annual freshets being as able to deposit soil above Indian remains as to uncover them), the present objects may be Indian copies of the horse hitching-weight which they used for anchoring canoes or fishing apparatus. The specimens seem too fragile in the handle and too well made for use as anchors unless employed only ceremonially. These so-called weights may have been used in a game and they are suggestive at least of curling-stones. If they are copies of a form brought here in the early historic days from the South sea by Kanakas in the employ of the fur traders, or from China or Russia, the author has no proof of the fact. Dr Berthold Laufer informs me, however, that certain ancient Chinese bronze weights are of the form under discussion. After all, these objects may be of purely Indian origin, the specimens here figured being simply a new or unusual form.

The three types of artifacts dealt with in this paper have existed in collections, as previously stated, but with the exception of the above brief references by Rev. Myron Eells, so far as the writer is aware they have remained unnoticed in literature, being undescribed probably because considered exceptional objects rather than a characteristic part of the archeology of the region in which they were found. They are now thought, therefore, to be practically new to science and worthy of publication as types.

The work of the Oregon Historical Society in collecting and preserving material of this kind, together with full records as to the localities where it was found and the conditions surrounding it in situ, is certainly commendable. It would seem possible that the Society might obtain from the Lewis and Clark Exposition a large amount of valuable material for a great museum in Portland, thus causing the Exposition to serve practically, if not ideally, the purpose of furthering anthropological science and the museum idea as an educational factor in the great Northwest.